

Atty Docket No.: MART4591

Serial No.: 09/759,899

REMARK**Present Status of the Application**

This Amendment is promptly filed to place the above-captioned case in condition for allowance. The title, the abstract and the claim of the present invention have been amended to more accurately describe the invention. An annotated version of the title, the abstract and claim 5 illustrating the changes made thereto is attached hereto as Exhibit A. The language in the amendments is for clarification and proper interpretation of the claims we set forth in our specification and are well support by the specification. No new matter has been added to the application by the amendments made to the claims or otherwise in the application. For at least the following reasons, it is submitted that this application is in condition for allowance. Reconsideration and withdrawal of the Examiner's rejection is respectfully requested.

Summary of Applicant's Invention

The Applicant's invention is directed to a method for removing a silicon oxide material. More particularly, the silicon oxide material, which is generated during an oxygen plasma being performed to remove a majority of photoresist layer formed over a silicon containing material, is removed by an ion bombardment method using an inert gas plasma used in removing a residual of the photoresist layer.

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Response to 35 U.S.C. 103 (a) rejection

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ngan et al. (US 5,759,360, Ngan hereinafter) in view of Lee et al. (US 5,705,432).

Applicants respectfully assert that Ngan in view of Lee is legally deficient for the purpose of rendering claim 5 unpatentable for at least the reason that not every element of the claim was taught or suggested by Ngan in view of Lee such that the invention as a whole would have been obvious to one of ordinary skill in the art. The present invention specifically teaches "an ion bombardment method using an inert gas plasma to remove a residual of the photoresist layer and to treat the silicon oxide material". The technical significant of the foregoing limitations is that during the removal of the photoresist layer using an oxygen plasma, a silicon oxide material tends to form on the silicon containing material. Therefore, in accordance to the present invention, the oxygen plasma is employed to remove a majority of the photoresist layer, followed by an ion bombardment using an inert gas plasma to remove a remaining of the photoresist layer and to concurrently remove the silicon oxide material that is generated in the oxygen plasma process. Consequently, not only the photoresist layer is removed, the unwanted silicon oxide material is also removed during the photoresist removal process. Ngan teaches a removal of a native oxide layer by adding a mixture of argon and oxygen to a plasma etch chamber and Lee teaches a native oxide layer is formed by exposing a GaAs substrate to an oxygen plasma. However, there is no where in Ngan or Lee that teaches or suggests the removal of the unwanted silicon oxide material during one part of the photoresist removal process; which as a result, the photoresist is completely removed, while the silicon oxide material is also treated.

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For at least the foregoing reasons, claim 5 is respectfully submitted to be patentable over the prior art of record. Accordingly, the Applicant respectfully requests that the rejection under 35 USC 103(a) be withdrawn.

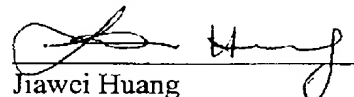
CONCLUSION

For at least the foregoing reasons, it is believed that all pending claims 5 and 6 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

Date: 3/11/2003

4 Venture, Suite 250
Irvine, CA 92618
Tel.: (949) 660-0761
Fax: (949)-660-0809

Respectfully submitted,
J.C. PATENTS



Jiawci Huang
Registration No. 43,330

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Title:

Please amend the title as follow:

[TREATMENT ON SILICON OXYNITRIDE] METHOD TO REMOVE SILICON
OXIDE MATERIAL GENERATED DURING REMOVAL OF PHOTORESIST

In The Abstract:

Please amend the abstract as follow:

A method to treat a silicon [oxynitride surface, including] oxide material generated during a removal of a photoresist layer configured above a silicon oxynitride surface [covered by a photo resist layer,] is described in which the photo resist layer is first removed by an oxygen plasma treatment process, followed by an argon plasma treatment process to overetch the SiON layer and to remove the silicon oxide material

In The Claims:

Claim 5 has been amended as follows:

5. (currently amended) A method to remove a silicon oxide material formed during a removal of a photoresist layer configured above a silicon containing material, [wherein the silicon oxide material is resulted from a reaction between silicon containing materials and oxygen plasma,] and the method in removing the silicon oxide material comprising:

an oxygen plasma to remove a majority of the photoresist layer, wherein the silicon oxide material is resulted from a reaction between the silicon containing material and the oxygen plasma; and

an ion bombardment method using an inert gas plasma to remove a residual of the photoresist layer and to treat the silicon oxide material.